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Application No.	09/934,791	Prepared by	NPB	Tracking Number	05907057
Examiner-GAU	1P – 2828	Date	6/16/04	Week Date	2/16/04
		No. of queries	1	IFW	

JACKET			
a. Serial No.	f. Foreign Priority	k. Print Claim(s)	p. PTO-1449
b. Applicant(s)	g. Disclaimer	l. Print Fig.	q. PTOL-85b
c. Continuing Data	h. Microfiche Appendix	m. Searched Column	r. Abstract
d. PCT	i. Title	n. PTO-270/328	s. Sheets/Figs
e. Domestic Priority	j. Claims Allowed	o. PTO-892	t. Other

SPECIFICATION

a. Page Missing
b. Text Continuity
c. Holes through Data
d. Other Missing Text
e. Illegible Text
f. Duplicate Text
g. Brief Description
h. Sequence Listing
i. Appendix
j. Amendments
k. Other

CLAIMS

a. Claim(s) Missing
b. Improper Dependency
c. Duplicate Numbers
d. Incorrect Numbering
e. Index Disagrees
f. Punctuation
g. Amendments
h. Bracketing
i. Missing Text
j. Duplicate Text
k. Other

MESSAGE

Original claim 32 is cancelled on claim pages dated 01/20/04, but allowed in NOA and index of claims.

Please advise/renumber the claims in the index, if necessary.

initials

RESPONSE

initials

Claim 26 (previously amended): The method according to claim 19, further including undoped DBRs.

Claim 27 (currently amended): The method according to claim 16, ~~further effecting~~ wherein the VCSEL ~~to~~ exhibits continuous wave operation at temperatures greater than about 80 degrees Celsius.

Claim 28 (previously amended): The method according to claim 20, further including an n-type InP and p-type InAlAs in the tunnel junction.

Claim 29 (currently amended): The method according to claim 16, further providing a thickness of about 1-3~~λ~~ times the optical wavelength to each of the heat spreading layers.

Claim 30 (cancelled)

Claim 31 (currently amended): A vertical-cavity surface-emitting laser (VCSEL) operating at a reduced temperature, the VCSEL comprising:

a first and a second reflecting surfaces in a VCSEL;

an active layer in the VCSEL;

a first and a second thermally conductive InP heat spreading layers in the VCSEL, said first heat spreading layer being in between the first reflecting surface and the active layer, and the second heat spreading layer being in between the second reflecting surface and the active layer; ~~and~~

an at least one metal contact adjacent the first thermally conductive InP heat spreading layer for permitting current to be injected through the at least one InP heat spreading layer, the current bypassing the first reflecting surface; and

the first and second heat spreading layers allowing heat generated in the VCSEL to bypass the first and second reflecting surfaces due to the higher thermal conductivity of the first and second heat spreading layers relative to the first and a second reflecting surfaces, thereby reducing the temperature of the VCSEL.

Claim 32 (cancelled)

Issue Classification	Application No.	Applicant(s)	
	09/934,791	COLDREN ET AL.	
	Examiner	Art Unit	
	Phillip Nguyen	2828	

ISSUE CLASSIFICATION

ORIGINAL CLASS	ORIGINAL SUBCLASS	CLASS	CROSS REFERENCE(S) SUBCLASS (ONE SUBCLASS PER BLOCK)
372	96	372	46

INTERNATIONAL CLASSIFICATION	
H01S	3/08
H01S	5/00
	/
	/
	/

Phillip Nguyen 01/02/2004
(Assistant Examiner) (Date)

Yolanda Robinson 1/13/04
(Legal Instruments Examiner) (Date)

PAUL IP 1/7/03
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800
(Primary Examiner) (Date)

Total Claims Allowed: 32

O.G. Print Claim(s)	O.G. Print Fig.
1	1

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	29	31		61		91		121		151		181
2	2	30	32		62		92		122		152		182
3	3	31	33		63		93		123		153		183
4	4	32	34		64		94		124		154		184
5	5		35		65		95		125		155		185
6	6		36		66		96		126		156		186
7	7		37		67		97		127		157		187
8	8		38		68		98		128		158		188
9	9		39		69		99		129		159		189
10	10		40		70		100		130		160		190
11	11		41		71		101		131		161		191
12	12		42		72		102		132		162		192
13	13		43		73		103		133		163		193
14	14		44		74		104		134		164		194
	15		45		75		105		135		165		195
15	16		46		76		106		136		166		196
16	17		47		77		107		137		167		197
17	18		48		78		108		138		168		198
18	19		49		79		109		139		169		199
19	20		50		80		110		140		170		200
20	21		51		81		111		141		171		201
21	22		52		82		112		142		172		202
22	23		53		83		113		143		173		203
23	24		54		84		114		144		174		204
24	25		55		85		115		145		175		205
25	26		56		86		116		146		176		206
26	27		57		87		117		147		177		207
27	28		58		88		118		148		178		208
28	29		59		89		119		149		179		209